

Hemostasis Hysterectomies in a Low Resources Country: Epidemiological, Clinical, and Therapeutic Aspects

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Abstract

Background: The perilous path of the African woman's pregnancy often ends in difficult situations putting her life in danger. One of the solutions to save her is often to "remove" her uterus, in a hemorrhage and emergency context. It is the hemostasis hysterectomy. It's generally practiced in difficult conditions with complicated operative follow-ups. The tragedy is that finally the patient will die (almost 1 time out of 2 in our study). This is the sad reality of resource-limited countries. How many women will continue to die under these conditions? This study attempts to explore the different aspects of this reality. **Objective:** To study the epidemiological, clinical, and therapeutic aspects of hemostasis hysterectomies at the Teaching Hospital of Souro Sanou University Hospital in Burkina Faso. **Methodology:** This was a prospective cross-sectional descriptive study conducted over 12 months from January 1 to December 31, 2015. Included in our study were all patients received in our department and who required a total or subtotal hysterectomy in the management of a severe postpartum hemorrhage, during the study period. **Results:** The frequency of hemostasis hysterectomies was 0.4% compared to all deliveries. The average age was 29.65 years old. The average parity was 4.3. Multiparas and large multiparas accounted for 65%. The main indications were uterine rupture (40%) and uterine inertia (60%). Hysterectomy was subtotal in 95% of cases. Maternal morbidity was dominated in 90% of cases by hemorrhagic shock, hemostatic disorders, and obstetrical fistulas. The prognosis was poor, with 8 deaths or 40% of cases. **Conclusion:** Better management of pregnancy and childbirth

would reduce cases of hemostasis hysterectomies. The availability of blood products would improve the maternal prognosis.

Keywords

Subtotal Hysterectomy, Uterine Rupture/Uterine Inertia, Reserved Prognosis

1. Introduction

Hemostasis hysterectomy is the removal of the uterus in a state of vital maternal emergency during the postpartum period [1]. It is a mutilating surgery performed as a last resort in the event of a serious obstetric hemorrhage. It has the advantage of offering some security, especially for women who wish not to have more pregnancies, but often at the cost of definitive sterility. In Africa, the conditions under which these interventions take place are not always ideal and the maternal and fetal prognosis is not good. As no studies have been undertaken in our department yet, we propose to study the profile of these women and the clinical particularity in which this therapeutic decision is made.

2. Methodology

We conducted a prospective cross-sectional descriptive study on women who underwent hemostatic hysterectomy in the Department of Obstetrics of Gynecology and Reproductive Medicine of the Souro Sanou Teaching University Hospital Center (Bobo Dioulasso, Burkina Faso) over a period of 12 months.

The study population consisted of all patients who had hysterectomy haemostasis in the peripartum. We have formed this study population on the basis of exhaustive type sampling excluding gynecological indication hysterectomies and those made in other structures and secondarily referred in our department. We conducted semi-structured interviews with patients. The data were collected from an inquiry sheet: patients' clinical records, operative and anesthetic records, hospital records of post-surgery patients, and pregnancy monitoring diaries.

2.1. Statistical Methods

The variables studied included: socio-demographic characteristics (age, occupation, marital status, level of education, origin, distance traveled), antecedents, clinical and paraclinical aspects, therapeutic aspects and maternal and neonatal prognosis. The data entry and analysis was done on a microcomputer and analyzed using the Epi info 6.0 software.

2.2. Ethical Aspects

With respect to ethical considerations, the patients included in our study were informed of the study's objectives. Their verbal consent was sought and obtained. The data collected was treated confidentially.

3. Results

In our department, during the study period, 20 hemostasis hysterectomies were performed for 5024 deliveries at a frequency of 0.4%.

3.1. Epidemiological Profile

The mean age of the patients was 29.65 years, with extremes of 16 to 39 years. The average parity was 4.3, with extremes of 1 to 8, and about half of the patients were large multiparas (**Table 1**).

The patients were mostly housewives (65%), married (75%), and had a secondary education level (55%). The unschooled accounted for 25%. In terms of distance traveled, more than 70% of the patients traveled at least 100 km to receive appropriate care (**Table 2**).

3.2. Clinical Aspects

Surgical history: we recorded 3 cases (15%) of cicatricial uterus.

Prenatal consultations: 75% of our patients received antenatal care, and 25% did not attend antenatal care sessions.

Mode and reason for admission: the majority of patients were evacuated in an emergency (95%) for various reasons. Immediate postpartum hemorrhage is one of the most common reasons for an emergency evacuation (20%); the causes of third trimester hemorrhage dominate indications for hemostasis hysterectomies (45%) (**Table 3**).

Term of pregnancy: pregnancies ranged from 28 to 32 weeks amenorrhea accounted for 25% of patients; 33 to 36 weeks 10%, and 37 to 41 weeks 65%.

Obstetrical examination data: the clinical examination of obstetrical patients can be summarized as follows: uterine rupture with fetuses outside the uterus in

Table 1. Distribution of patients by parity.

Parity	n	%
Primiparous (1)	3	15
Paucipara (2 - 3)	4	20
Multipare (4 - 6)	9	45
Large multipare (≥ 7)	4	20
TOTAL	20	100

Table 2. Distribution of patients according to distance traveled.

Distance	n	%
0 à 50 km	2	10
51 à 100 km	3	15
101 à 200 km	10	50
Supérieure à 201 km	5	25
Total	20	100

Table 3. Distribution of patients according to the reason for admission.

Reason for admission	n	%
Immediate postpartum haemorrhage	4	20
Retroplacental Hematoma	3	15
Placenta praevia hemorrhagic	3	15
Uterine rupture	3	15
Pre-rupture syndrome	3	15
Dead fetus retention	2	10
Fetal pelvic disproportion	1	5
Pelvic abdominal pain of labor	1	5
Total	20	100

5 cases (25%); uterine atony in 4 cases (20%); a retro-placental hematoma in 6 cases (30%); uterine rupture discovered in the postpartum period, 3 cases (15%); a dead egg retention in 1 case (5%); and an over distension by twin pregnancy in 1 case (5%).

3.3. Therapeutic Aspects

Delivery way: of the 20 patients who underwent a hemostatic hysterectomy, we recorded 4 vaginal deliveries (20%), 11 caesareans (55%), and 5 laparotomies (25%) for uterine rupture. Indications for hysterectomies of hemostasis: hysterectomy was performed in 60% of cases for uterine inertia with persistent hemorrhage and in 40% of cases for uterine rupture with extensive anatomical lesions.

Type of hysterectomy: the hysterectomies were subtotal in 19 cases (95%) and total in 1 case (5%).

Complementary gestures: we performed a bladder suture in 5 cases (25%).

Resuscitation measures: perioperatively, the venous route was taken with a crystalloid infusion in 100%; a red blood cell transfusion was indicated in 19 cases (95%) and only 25% of the patients could be transfused with fresh frozen plasma.

3.4. Maternal Prognosis

Intraoperative complications: half of the patients (50%) presented hemorrhagic shock; hemostasis disorders were observed in 30% of the cases; and 10% of patients were successfully resuscitated following cardiac arrest.

Postoperative complications: anemia was found in 45% of patients; 10% of patients presented Obstetrical fistulas; and 8 patients died (40%) on the table of hemorrhagic shock with coagulation disorders.

4. Discussion

Hemostatic hysterectomy is an emergency maternal rescue surgery after failure of all the usual means of management of obstetric bleeding [2] [3]. The choice of

this therapeutic option depends on several factors namely, the delivery route, the origin and the importance of the bleeding, the hemodynamic tolerance of the patient, and the means of management available [4]. Its frequency is still high throughout the world, predominantly in southern countries [5] [6]. We collected 20 cases of hemostasis hysterectomy in 5,024 deliveries during the same period (one year) and in the same department (*i.e.*, a frequency of 0.4%). This frequency remains in the range of other African studies. Indeed, Nkwabong in Cameroon [7] and Marouf in Morocco [8] found 0.11% and 0.16%, respectively; Nayama in Niger found [9] 1.25%. The peculiarity in Africa is based on a certain number of risk factors: difficulties of access to health structures, lack of awareness of the signs of danger by patients, lack of supervision during childbirth, work and a low level of education leading to a delay in all decision-making [10].

Our patients were young (29.6 years), large multiparity (parity 4.3), and mostly from rural areas. This profile is found in earlier studies in Madagascar [11] and Burundi [2]. It is in Tunisia that the average age of 33.3 years remains relatively high compared to our series [1]. The consequence of this mutilating surgery in young women during sexual activity is definitive sterility.

High parity is recognized by the majority of authors as a contributing factor to obstetric complications [1] [2] [7] [9] [12]. Indeed, multiparity weakens the walls of the uterus over multiple pregnancies and thus can be a factor in uterine rupture during labor, uterine inertia, and even hemorrhage in the postpartum period.

Health evacuations exacerbate the prognosis of patients [13]. In our series, 95% of the patients were evacuated from the periphery to our reference structure. In countries with limited resources, this situation is due to the dysfunction of the peripheral structures and by the lack of qualified personnel. In addition, the poor state of the road infrastructure makes access to health facilities difficult and increases the delay in the care of evacuated patients.

The antecedents of a scarred uterus were found in 15% of our patients. Some studies have found up to 33% in their series [1]. In his series, Ramanathan showed that the uterine scar is an indication of weakening of the uterus [14]. This is why we must consider the indications of the first cesarean section

Acquired hemostatic disorders resulting in postpartum hemorrhage are favorable situations for the indication of hemostasis hysterectomies [15] [16]. Several pregnancy-related pathologies such as in utero fetal death, retro placental hematoma, and placenta previa can cause these situations [17]. In our series, we found at the end of the clinical examination that 30% of cases were retro placental hematomas and 5% of cases were fetal death in utero.

Other situations may also be considered at risk of hemostatic hysterectomy such as uterine over distension, which may be related to fetal macrosomia, hydramnios, or twin pregnancy [14]. We noted that 5% were twin pregnancies in our study.

The hemorrhagic factors in our series were uterine inertia (60%) and uterine rupture (40%). Dreyfus reported that these 2 factors were responsible for, re-

spectively, 61.1% and 33.3% of cases of hemostasis hysterectomy [18]. In some series, uterine inertia is the main cause of hysterectomy for hemostasis [19] [20] [21]. A subtotal hysterectomy instead of a total hysterectomy was performed on 95% of our patients. This was also the trend in almost all previous studies. Indeed, Mathlouthi and Randriambelomanana reported that 80.5% and 81%, respectively, of cases were subtotal hysterectomies [1] [11]. This technique has an advantage because of the speed of the gesture and the reduction of operative time in front of a patient with a precarious hemodynamic state.

Resuscitation consisted mainly of vascular filling by crystalloids in 100% of cases and the indication of a transfusion of labile blood products in almost all our patients (95%). Only 25% of these patients could really be transfused. Yet blood transfusion would improve the maternal prognosis as proven by other studies [22].

The rate of perioperative morbidity remains acceptable in our context compared to that reported by Christopoulos, who had a morbidity rate of 46.6% and a mortality rate of 6.6% after a study of 15 cases of hemostatic hysterectomy in 2000 deliveries [23]. In our study, maternal lethality in the context of hemostasis hysterectomy is particularly high (40%), even compared to other African series where the figures oscillate between 11% and 25%. This could be explained by the recurrent lack of blood products and the often late decision to switch to a hysterectomy, especially when the patient is young.

Maternal morbidity was dominated by anemia and obstetric fistulas in 90% of surviving patients. This is an alarming statistic that indicates the tragedy that African women face after a perilous journey to give birth. Marouf, in his series, reported a maternal morbidity of 52.93%, dominated by urologic complications [8].

Limit of the Study

In this study we did not take into account certain aspects such as the conditions of evacuation, the time taken for the care in our department, the competence of the operator and the duration of the interventions. Biases could be introduced into the patients' responses at the time of the semi-structured survey because it was in an emergency context.

5. Conclusion

Hemostatic hysterectomy remains a lifesaving procedure in cases of hemorrhaging after childbirth. However, realities exist around this procedure that must lead us to codify its indications. It is a question of knowing when to act and how to minimize the immediate and distant complications of an operation. Better management of pregnancy and childbirth would reduce its indications, and the availability of blood products would improve maternal prognoses.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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